

Appl. No.: 10/736,882
Filed: December 16, 2003
Page 2

Amendments to the Claims:

Please amend Claims 1, 2, 23, 24, 26, and 27; add Claims 49-55 and cancel Claims 4-22, 31-33, and 36-48 as follows:

1. (currently amended) A ribbon cartridge for a thermal transfer printer configured to provide a retractable feed for a donor ribbon, the ribbon cartridge comprising:

a housing having opposing first and second walls;

a roll of donor ribbon wound on a hollow core within the housing, the core having an inner and an outer surface, wherein the outer surface is configured to support a roll of the donor ribbon;

a clutch operatively coupled to the core; and

a resilient structure extending between the first and second opposing walls and through the core, the resilient structure including a body, a first end, and a second end, the first end coupled to the first wall and the second end coupled to the second wall, and the body configured to radially engage the inner surface of the core, wherein the resilient structure stores torsional energy by twisting elastically as the core is rotated frictionally coupled to an inner surface of the core and to the cartridge housing, and configured such that the release of energy stored in the resilient structure by advance of the donor ribbon produces retraction of ribbon slack if the donor ribbon is released or backfed.

2. (currently amended) The ribbon cartridge of claim 1 wherein the body of the resilient structure includes a clutch section, a first spring section extending between the first end and the clutch section, and a second spring section extending between the second end and the clutch section, each section defining a cross-section, the cross-section of the clutch section configured to engage the inner surface of the core, and the cross-section of each of the spring sections are less than cross-section of the clutch section and configured to twist elastically clutch is formed of an elastomeric material.

Appl. No.: 10/736,882
Filed: December 16, 2003
Page 3

3. (original) The ribbon cartridge of claim 1 wherein the resilient structure is formed of an elastomeric material.

Claims 4-22 (canceled)

23. (currently amended) A thermal transfer ribbon cartridge with self-contained clutching and slack take-up capability, comprising:

a cartridge housing;

a hollow core located within said housing and configured to receive a roll of ribbon;

at least one restraining structure external to the core;

a clutch located within said core and ~~having a friction component~~ configured to induce frictional engagement with said core, at least one end of the clutch adapted to be externally constrained; and

at least one a resilient component, each resilient component coupled to the clutch and at least one of said restraining structures located between said frictional component and said at least one end of the clutch;

a restraining structure external to said core, configured to receive and constrain said at least one end of the clutch; and

wherein each said resilient component is structure being configured such that to store a torsional energy by twisting elastically stored in the resilient component when the ribbon is rotated such that when the ribbon is withdrawn the torsional energy serves to retract slack when the ribbon is backfed.

24. (currently amended) The ribbon cartridge defined by claim 23 wherein each said restraining structure comprises part of said cartridge housing.

25. (original) The ribbon cartridge defined by claim 23 further including a support independent of said core and clutch, said support configured to support the weight of said core and roll.

Appl. No.: 10/736,882
Filed: December 16, 2003
Page 4

26. (currently amended) The ribbon cartridge defined by claim 25 wherein said support comprises part of at least one of said restraining structures structure.

27. (currently amended) The ribbon cartridge defined by claim 23 wherein the clutch said friction component and at least one said resilient component are parts of a common member.

28. (original) The ribbon cartridge defined by claim 27 wherein said common member comprises an elastomer.

29. (original) The ribbon cartridge defined by claim 28 wherein said elastomer is flat and comprises a center section configured to engage said core with an interference fit.

30. (original) The ribbon cartridge defined by claim 28 wherein said elastomer is flat and comprises an end section adapted to fit an external key to provide said constraint.

Claims 31-33 (canceled)

34. (original) The cartridge defined by claim 23 wherein said roll is adapted to be rotatably supported on an externally mounted shaft.

35. (original) The cartridge defined by claim 27 wherein said roll is adapted to be rotatably supported on an externally mounted shaft, and wherein said common member has a longitudinal opening configured to receive said shaft.

Claims 36-48 (canceled)

Appl. No.: 10/736,882
Filed: December 16, 2003
Page 5

49. (new) A ribbon cartridge for a printer configured to provide a retractable feed for a donor ribbon, the ribbon cartridge comprising:

a housing defining an interior for substantially containing a roll of the donor ribbon, the housing having at least one support structure;

a hollow core contained substantially within the interior, and configured to support the roll of the donor ribbon; and

a resilient member extending through the core, the resilient member having at least one end coupled to at least one support structure, a clutch section, and at least one spring section, wherein the clutch section defines a cross-section configured to radially engage the hollow core, and each spring section extends between at least one end and the clutch section and defines a cross-section smaller than the cross-section of the clutch section such that a rotation of the clutch section creates an elastic twist in the spring section biased to the rotation, and advancing the donor ribbon causes the core and the clutch section to rotate, thereby further creating the elastic twist in each spring section that serves to retract slack in the donor ribbon when the donor ribbon is backfed.

50. (new) The ribbon cartridge according to Claim 49, wherein the resilient member extends from a first end and a second end, each end coupled to a support structure, and the resilient member further including two spring sections, each spring section extending between an end and the clutch section.

51. (new) The ribbon cartridge according to Claim 50, wherein the resilient member is formed from an elastomer material.

52. (new) The ribbon cartridge according to Claim 51, wherein the elastomer material is urethane.

53. (new) The ribbon cartridge according to Claim 50, wherein the housing is formed from cardboard.

Appl. No.: 10/736,882
Filed: December 16, 2003
Page 6

54. (new) The ribbon cartridge according to Claim 50, wherein the core is formed from fiber.

55. (new) The ribbon cartridge according to Claim 50, wherein the cross-section of the clutch section and the cross-section of each spring section is substantially rectangular in shape.